Claims

1. A pharmaceutical composition for sublingual, buccal or enteric administration comprising at least one substance obtainable by hydrolysis with chymotrypsin of an antigenic structure which induces graft rejection, allergic reaction or autoimmune disease.

2. The pharmaceutical composition of claim 1 wherein the amount of the at least one substance is in the range of 0,001 to 1000 µg, preferably 1 to 100 µg.

3. The pharmaceutical composition of claim 1 or 2 wherein the at least one substance is obtainable by hydrolysis of a protein.

4. The pharmaceutical composition of any one of claim 1 to 3 wherein the at least one substance is a peptide.

5. The pharmaceutical composition of claim 4 wherein the peptide has a molecular weight of less than 30 kDA, preferably less than 10 kDa.

6. The pharmaceutical composition of any one of claim 1 to 5 comprising additionally at least one substance selected from the group of nucleoside triphosphates, nucleoside diphosphates, nucleoside monophosphates, nucleic acids, peptide nucleic acids, nucleosides or analogs thereof, immunosuppressive cytokines, compounds inducing expression of immunoproteasomes, 1,25-dihydroxyvitamin D3 or analogs thereof, lipopolysaccharides, endotoxins, heat shock proteins, thioredoxin with either NADPH or NADP-thioredoxin reductase, dithiothreitol, adrenergic receptor agonists such as salbutanol, adrenergic receptor antagonists such as butoxamine, compounds that regulate the expression of the adhesion molecule ICAM-1, N-acetyl-L-cysteine, y-L-glutamyl-L-cysteinyl-glycine (reduced L-glutathione), alpha-2-macroglobulins, inducers for Foxp3 gene expression, flavonoids, isoflavonoids, pterocarpanoids, stilbenes such as resveratrol, tachykinin receptor antagonists, chymase inhibitors, a muco-adhesive agent for attaching the parti-

cle to the intestinal mucosal lining such as a plant lectin, zinc, zinc salts, polysaccharides, vitamins and bacterial lysates.

7. The pharmaceutical composition of any one of claim 1 to 6 wherein the antigenic structure is selected from insulin, thyroglobulin, thyroid peroxidase, type II collagen, gliadin, GAD65, proteolipid protein, S-antigen, acetylcholin receptor, haptenized colonic proteins, interphotoreceptor retinoid binding protein, myelin basic protein, myelin oligodendrocyte glycoprotein, peripheral nerve P2, cytoplasmic TSH receptor, intrinsic factor, lens proteins, platelets, nucleoproteins such as histones, heat shock proteins, MHC I, MHC II, MHC-peptides complexes, milk allergens, venom allergens, egg allergens, weed allergens, grass allergens, tree allergens, shrub allergens, flower allergens, grain allergens, fungi allergens, fruit allergens, berry allergens, nut allergens, seed allergens, bean allergens fish allergens, shellfish allergens, meat allergens, spices allergens, insect allergens, mite allergens, animal allergens, animal dander allergens, allergens of Hevea brasiliensis, coagulation factors and blood group antigens.

8. Use of the pharmaceutical composition according to any one of claims 1 to 7 for the treatment or prevention of graft rejection, allergic reaction or autoimmune disease.

9. Use of a composition according to any one of claims 1 to 8 for elicting oral tolerance and/or the induction of cells that may produce immunosuppressive cytokines, more preferably TGF-beta and/or IL-4 and/or IL-10.

10. A process for the preparation of the pharmaceutical composition of any one of claims 1 to 7 comprising the steps of

- hydrolyzing with chymotrypsin an antigenic structure which induces graft rejection, allergic reaction or autoimmune disease to obtain at least one substance
- formulating the at least one substance for enteric, sublingual or enteric administration.

11. A composition comprising at least one substance obtainable by hydrolysis with chymotrypsin of an antigenic structure which induces graft rejection, allergic reaction or autoimmune disease.

12. The pharmaceutical composition of claims 1 or 2 in a sublingual formulation.

13. The pharmaceutical composition of claims 1 or 2 in a buccal formulation.

14. The pharmaceutical composition of claims 1 or 2 in an enteric formulation.